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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,312

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EXAMINER

OBERLY, ERIC T

ART UNIT

PAPER NUMBER

2184

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,312	Applicant(s) YAMAWAKI, TOSHIO	
	Examiner ERIC T. OBERLY	Art Unit 2184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/31/06, 7/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 8, 9, 11, and 12 are rejected under 35 USC 103(a) as being obvious over Yamauchi et al. European Patent Application # EP 1103973 A2, hereinafter referred to as Yamauchi, in view of Kashiwazaki et al. US Patent # 5157614, hereinafter referred to as Kashiwazaki.

Referring to claim 1, Yamauchi discloses a hard disk drive (HDD) control apparatus (Fig. 1), comprising: a means for connecting the HDD control apparatus to a navigation system (Interface 5, Fig. 1); a means for connecting the HDD control apparatus to an HDD (HD Drive 28, Fig. 28); a means for connecting the HDD control apparatus to a second system (Display Device 13 and Audio Device 18, Fig. 1); a decompression unit (Expanding 24, Fig. 1) that decompresses data read from the HDD and transmits the resultant data to the second system (col. 20, lines 17-23); and a control unit (system controller 4, Fig. 1; col. 12, lines 8-11) that writes or reads data in or from the HDD in response to a command sent from the navigation system (col. 14, lines 8-10), that reads data from the HDD in response to a command sent from the second system (col. 20, lines 17-19), and instructs the decompression unit to decompress the data and transmit the resultant data to the second system (col. 20, lines 20-23), and that

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when the command to access the HDD is issued concurrently from the navigation system and the second system alike, arbitrates the commands through time sharing.

Yamauchi does not appear to explicitly disclose when the command to access the HDD is issued concurrently from the navigation system and the second system alike, arbitrates the commands through time sharing.

However, Kashiwazaki discloses when the command to access the HDD is issued concurrently from the navigation system and the second system alike, arbitrates the commands through time sharing (col. 2, lines 30-39).

Yamauchi and Kashiwazaki are analogous art because they are from the same field of endeavor, vehicle navigation and music systems.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi and Kashiwazaki before him or her, to modify the system controller of Yamauchi to include the driver changer function of Kashiwazaki because the HDD of Kashiwazaki stores both map and music data which requires the system controller to share the HDD between the navigation system and audio system and the driver change function of Kashiwazaki would allow the system to alternate between the map data area and the music data area of the HDD in a manner to insure that music playback is not interrupted.

The suggestion/motivation for doing so would have been inherent requirement of the system Yamauchi to control the sharing of the HDD drive between navigation system and the audio system because the HDD stores both map and music data (see Yamauchi, col. 12, lines 37-40), therefore one of ordinary skill in the art would be

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motivate to perform the sharing so that to minimize the interruption of the music (see Kashiwazaki, col. 8, lines 24-27)

Therefore, it would have been obvious to combine Yamauchi and Kashiwazaki to obtain the invention as specified in the instant claim.

As to claim 2, Yamauchi teaches a compression unit (compressing, 23, Fig. 1) that compresses received data and transmits the resultant data to the HDD (col. 15, lines 42-47), wherein: in response to a command sent from the second system, the control unit instructs the compression unit to compress received data and write the resultant data in the HDD (col. 15, lines 21-30).

As to claim 5, Yamauchi teaches a memory unit interface (MD (Mini Disk) Drive 12, Fig. 1), wherein: the control unit controls the data transfer between a memory and the HDD (col. 16, lines 48-58 and col. 17 lines 1-3).

As to claim 8, Yamauchi teaches comprising peripherals so as to permit addition of user interfaces (input device; col. 12, lines 12-13).

As to claim 9, Yamauchi teaches software, based on which the control unit acts, is stored in a flash ROM (col. 12, lines 50-52).

Referring to claim 11, Yamauchi discloses a hard disk drive (HDD) control apparatus (Fig. 1), comprising: a means for connecting the HDD control apparatus to a navigation system (Interface 5, Fig. 1); a means for connecting the HDD control apparatus to an HDD (HD Drive 28, Fig. 28); a means for connecting the HDD control apparatus to an audiovisual (AV) system (Display Device 13 and Audio Device 18, Fig. 1); a decompression unit (Expanding 24, Fig. 1) that decompresses data read from the HDD, and transmits the resultant data to the AV system (col. 20, lines 17-23); a control unit (system controller 4, Fig. 1; col. 12, lines 8-11) that writes or reads data in or from the HDD in response to a command sent from the navigation system (col. 14, lines 8-10), that reads data from the HDD in response to a command sent from the AV system (col. 20, lines 17-19), and instructs the decompression unit to decompress the data and transmit the data to the AV system (col. 20, lines 20-23), and that when the command to read data from the HDD is issued concurrently from the navigation system and AV system alike, suspends reading of data concerning the navigation system and reads compressed data concerning the AV system.

Yamauchi does not appear to explicitly disclose when the command to read data from the HDD is issued concurrently from the navigation system and AV system alike, suspends reading of data concerning the navigation system and reads compressed data concerning the AV system.

However, Kashiwazaki discloses when the command to read data from the HDD is issued concurrently from the navigation system and AV system alike, suspends

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reading of data concerning the navigation system and reads compressed data concerning the AV system (col. 2, lines 30-39 and col. 5, lines 55-59).

Yamauchi and Kashiwazaki are analogous art because they are from the same field of endeavor, vehicle navigation and music systems.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi and Kashiwazaki before him or her, to modify the system controller of Yamauchi to include the driver changer function of Kashiwazaki because the HDD of Kashiwazaki stores both map and music data which requires the system controller to share the HDD between the navigation system and audio system and the driver change function would insure that music playback is not interrupted.

The suggestion/motivation for doing so would have been inherent requirement of the system Yamauchi to control the sharing of the HDD drive between navigation system and the audio system because the HDD stores both map and music data (see Yamauchi, col. 12, lines 37-40), therefore one of ordinary skill in the art would be motivate to perform the sharing so that to minimize the interruption of the music (see Kashiwazaki, col. 8, lines 24-27)

Therefore, it would have been obvious to combine Yamauchi and Kashiwazaki to obtain the invention as specified in the instant claim.

As to claim 12, Yamauchi teaches a compression unit (compressing, 23, Fig. 1) that compresses received data and transmits the resultant data to the HDD (col. 15, lines 42-47), wherein: in response to a command sent from the AV system, the control

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unit instructs the compression unit to compress received data and write the resultant data in the HDD (col. 15, lines 21-30).

Claims 3, 4, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Kashiwazaki as applied to claim 11 above, and further in view of Okuyama et al. US Patent # 6687072, hereinafter referred to as Okuyama.

As to claim 3, Yamauchi in view of Kashiwazaki discloses the means for connecting the HDD control apparatus to the navigation system is an AT attachment (ATA) interface, and a command to leave the ATA interface unoccupied is adopted as the command sent from the second system (col. 2, lines 30-39 and col. 5, lines 55-59).

Yamauchi in view of Kashiwazaki does not appear to explicitly disclose an AT attachment (ATA) interface.

However, Okuyama discloses an AT attachment (ATA) interface (Fig. 1 and 3, col. 12-27).

Yamauchi in view of Kashiwazaki and Okuyama are analogous art because they are from the same field of endeavor, vehicle navigation systems

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Okuyama before him or her, to modify the HDD of Yamauchi in view of Kashiwazaki to include the ATA interface of Okuyama because the ATA interface is an industry standard and would be an obvious variant to one of ordinary skill in the art.

The suggestion/motivation for doing so would have been the use of an expected industry standard interface as taught by Okuyama (col. 4, lines 33-39)

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Okuyama to obtain the invention as specified in the instant claim.

As to claim 4, Yamauchi in view of Kashiwazaki discloses the means for connecting the HDD control apparatus to the navigation system is an ATA interface, and the means for connecting the HDD control apparatus to the second system is an interface different from the ATA interface (Interface 5, Fig. 1).

Yamauchi in view of Kashiwazaki does not appear to explicitly disclose an ATA interface or an interface different from the ATA interface.

However, Okuyama discloses an ATA interface or an interface different from the ATA interface (Fig. 1 and 3, col. 12-27).

Yamauchi in view of Kashiwazaki and Okuyama are analogous art because they are from the same field of endeavor, vehicle navigation systems.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Okuyama before him or her, to modify the information recording and reproducing apparatus of Yamauchi in view of Kashiwazaki to include the various interfaces as taught Okuyama because the ATA interface and the like are industry standards and would be an obvious variant to one of ordinary skill in the art.

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The suggestion/motivation for doing so would have been the use of an expected industry standard interface as taught by Okuyama (col. 4, lines 33-39)

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Okuyama to obtain the invention as specified in the instant claim.

As to claim 6, Yamauchi in view of Kashiwazaki does not appear to explicitly disclose an interface via which the navigation system accesses a memory unit is an ATA interface.

However, Okuyama discloses an interface via which the navigation system accesses a memory unit is an ATA interface (Fig. 1 and 3, col. 12-27).

Yamauchi in view of Kashiwazaki and Okuyama are analogous art because they are from the same field of endeavor, vehicle navigation systems

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Okuyama before him or her, to modify the navigation system of Yamauchi in view of Kashiwazaki to include the ATA interface of Okuyama because the ATA interface is an industry standard and would be an obvious variant to one of ordinary skill in the art.

The suggestion/motivation for doing so would have been the use of an expected industry standard interface as taught by Okuyama (col. 4, lines 33-39)

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Okuyama to obtain the invention as specified in the instant claim.

As to claim 10, Yamauchi in view of Kashiwazaki does not appear to explicitly disclose a general-purpose HDD, and the means for connecting the HDD control apparatus to the HDD is an ATA interface.

However, Okuyama discloses a general-purpose HDD, and the means for connecting the HDD control apparatus to the HDD is an ATA interface (Fig. 1 and 3, col. 12-27).

Yamauchi in view of Kashiwazaki and Okuyama are analogous art because they are from the same field of endeavor, vehicle navigation systems

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Okuyama before him or her, to modify the HDD of Yamauchi in view of Kashiwazaki to be a General Purpose HDD and include the ATA interface of Okuyama because they are industry standards and would be an obvious variant to one of ordinary skill in the art.

The suggestion/motivation for doing so would have been the use of an expected industry standard interface as taught by Okuyama (col. 4, lines 33-39).

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Okuyama to obtain the invention as specified in the instant claim.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Kashiwazaki as applied to claim 11 above, and further in view of Jacobs et al. US Patent # 6618788, hereinafter referred to as Jacobs.

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As to claim 7, Yamauchi in view of Kashiwazaki discloses a plurality of memory unit interfaces is included (MD Drive 12, DVD-ROM Drive 11; Fig. 1), the control unit selects one of the memory unit interfaces, and instructs the selected interface, via which the navigation system accesses a specific memory unit (col. 14, lines 29-34), to function as a slave of an ATA interface.

Yamauchi in view of Kashiwazaki does not appear to explicitly disclose instructing the selected interface to function as a slave of an ATA interface.

However, Jacobs discloses selected interface to function as a slave of an ATA interface (col. 1, lines 44-56).

Yamauchi in view of Kashiwazaki and Jacobs are analogous art because they are from the same problem solving endeavor, communication among multiple system components.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Jacobs before him or her, to modify the system controller of Yamauchi in view of Kashiwazaki to identify a slave device as taught by Jacobs as a known standard in implementing the ATA interface and operations

The suggestion/motivation for doing so would have been the typical implementation of the ATA interface as taught by Jacobs (col. 1, lines 11-19) would be an obvious variant to one of ordinary skill in the art.

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Jacobs to obtain the invention as specified in the instant claim.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Kashiwazaki as applied to claim 11 above, and further in view of Kansal et al. US Patent # 5657055, hereinafter referred to as Kansal.

As to claim 13, Yamauchi in view of Kashiwazaki teaches a buffer RAM (see Yamauchi, buffer memory, 15, Fig. 1, col. 13, lines 12-14) in which the compressed data concerning the AV system which is read from the HDD is stored (see Yamauchi, col. 15, lines 42-47), wherein: when an amount of compressed data remaining in the buffer RAM becomes equal to or smaller than a certain value, the control unit reads compressed data from the HDD and writes the data in the buffer RAM.

Yamauchi in view of Kashiwazaki does not appear to explicitly disclose when an amount of compressed data remaining in the buffer RAM becomes equal to or smaller than a certain value, the control unit reads compressed data from the HDD and writes the data in the buffer RAM.

However, Kansal discloses when an amount of compressed data remaining in the buffer RAM becomes equal to or smaller than a certain value, the control unit reads compressed data from the HDD and writes the data in the buffer RAM (col. 3, lines 1-21).

Yamauchi in view of Kashiwazaki and Kansal are analogous art because they are from the same field of endeavor, display systems.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Yamauchi in view of Kashiwazaki and Kansal before him

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or her, to modify the Graphics controller of Yamauchi in view of Kashiwazaki to include the low level watermark signal of Kansal because the signal would allow the system to maintain a constant level of read ahead data.

The suggestion/motivation for doing so would have been to use the buffer memory in an efficient manner for storing instantly accessible data (col. 13, lines 13-14)

Therefore, it would have been obvious to combine Yamauchi in view of Kashiwazaki and Kansal to obtain the invention as specified in the instant claim.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent # 6401033 of Paulauska et al. is pertinent to the field of vehicle navigation systems with shared resources.

US Patent # 5944768 of Ito et al. is pertinent to navigation system information buffering.

US Patent # 706233 of d'Alayer de Costemore d'Arc et al. is pertinent to control system for selecting between audio/visual data and navigation data.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC T. OBERLY whose telephone number is (571)272-6991. The examiner can normally be reached on Monday - Friday 7:30 - 5:00PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on (571) 272-4176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. T. O./
Examiner, Art Unit 2184

**/Henry W.H. Tsai/
Supervisory Patent Examiner, Art Unit 2184**